

righttrack

Issue 18 Winter 2017



Non-technical skills



Our regular features

RAIB Report Brief

SPAD and derailment at Paddington

The Lowdown

Multi-purpose vehicle driver

SPADtalk

Newswire

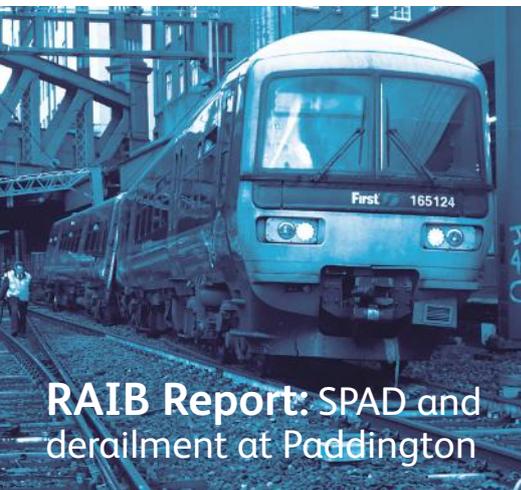
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Lean on me

Using NTS at the PTI



Fatigue, Health and Wellbeing



**RAIB Report: SPAD and
derailment at Paddington**



**Suicide - Reducing the
risk on the railway**

Headlamp

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Hello, and welcome to issue 18 of Right Track!

In this edition, we have a whole section on non-technical skills (NTS) and how they can help keep the operational railway safe: our SPADtalk looks specifically at how fatigue can contribute to SPADs; and we hear how NTS can be used to reduce the risk of incidents at the platform/train interface.

We hear about the work Network Rail is doing to put staff at the front line of operations in control in the LEAN programme. We also have our regular features: in our RAIB report we look at the Paddington derailment; and in the Lowdown we join Andy Saunders, driver on an anti-icer, to see how he keeps the railway moving in winter.

This February, we're marking 10 years without a train crash fatality, which shows how far we've come in terms of safety (p16). However, the industry is not complacent about the risks that remain: the number of suicides on the railway continues to be a big concern (p13).

As ever, we would love to have your feedback on any of the articles in this issue. If you have any comments, please email us at righttrack@rssb.co.uk



Right Track can be downloaded from Opsweb: www.opsweb.co.uk.

Right Track is produced by RSSB through cross-industry co-operation. It is designed for the people on the operational front line on the national mainline railway, yards, depots and sidings, and London Underground. Their companies are represented on various cross-industry groups, including the System Safety Risk Group, managed through RSSB, and Right Track is overseen by a cross-industry editorial group.

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LEAN on me

| DAILY COMMS | |
|-------------|-------------------------|
| DATE/TIME | 21/01/16 08:00 |
| LOCATION | 21/01/16 08:00 |
| CATEGORY | INTERNAL COMMUNICATIONS |
| SAFETY | ... |
| QUALITY | ... |
| DELIVERY | ... |
| PEOPLE | ... |
| COST | ... |
| ENVIRONMENT | ... |

The team



Tony Osborne, Section Manager

The LEAN board



So here I am, at a pair of towering metal gates at the end of what seems like a barren industrial estate. Am I at the right place? I ponder, looking around whilst rubbing my hands together in the cold.

I'm at the Camden Maintenance Depot to see Tony Osborne. A bit of background on Tony: he's a Section Manager covering Richmond to Stratford. It's his responsibility to provide 24/7 roster for faulting and maintenance, and to make sure the eight shift teams are safe and compliant. I did a LEAN management course with him a little while ago.

LEAN management is a bit of a buzz word these days, and I have heard many a cynic complain that it is about plastering the business with whiteboards. However, I immersed myself in the two-week training programme, I came to the conclusion that LEAN is all about flipping the organisational pyramid and empowering the front line. So when Tony invited me to see the work he has been doing to empower his team, I couldn't resist.

I'm now being taken through to a real live visualisation meeting. Introduced in January 2016, these meetings are led by the staff on each shift which goes straight to the heart of empowering staff. There are three shifts per day, and each one opens with a meeting around the LEAN board.

The daily board runs through different categories, including safety, quality, delivery, people, cost and environment. There's also a weekly board that Tony updates, covering what is planned for each shift. It includes space for staff to put any concerns up. Against each concern is an action, and against each action is an owner. This means that the owner of any action can be held to account, and staff can see what is being done to tackle any of their concerns.

This is LEAN in action - but I'm sure getting to this point hasn't been an easy journey. I asked Tony how long it too for this to happen, and he tells me that he had to keep reminding staff this is their board, and had to really encourage them to attend the meetings when they first started.

Now the staff can see the benefits and the differences they can make through these meetings. One early success happened a couple of years ago, when an amazing connection was made during a meeting. An axle counter had failed due to water ingress onto the head, causing 800 minutes of delay. When discussing repeat failures during the meeting, someone mentioned another axle counter head that had never been revisited. So the team visited it, and found that it was full of water and about to fail! This discovery saved hundreds of potential delay minutes.

There have been some lows too though. Tony found out that when there's a period with a lot of holidays, the whole thing can fall apart. At one point, the meetings weren't held for two weeks; there were nine missed shifts and they lost loads of work. It gave the team the kick they needed to keep the focus on LEAN.

Sometimes it is hard. But the attitude will stay the same: it belongs to staff, and they will get out what they put in. Participation is empowering, and now staff are able to change anything and everything, so long as it is within the standard.

So, what have I taken away from learning about the LEAN journey Tony and his team went on? Well, he said that asking the right questions is vital; as is getting his team to understand that they are the ones changing what is going on around them. I love how Tony's staff are the most important people to the process, and that he tells them all the time.



RAIB report brief

SPAD and derailment at Paddington

At 18:12 on 16 June 2016, a two-car DMU passed a signal at danger immediately outside Paddington station and derailed on trap points before striking an OLE mast. Part of the structure supported by it dropped to a position where it was blocking the railway.

There were no passengers on board and the driver was unhurt, but Paddington was closed for the rest of that evening, with some services affected until Sunday 19 June.

The driver had qualified to drive trains only eight months earlier, in October 2015. During training, he'd learned the routes out of Paddington, including the link line and Royal Oak sidings where the incident occurred...but...he'd only driven over it once during his training, and only once since qualifying.

He had copies of the line diagram for the route in his bag, and could have referred to them while waiting in the sidings. Instead, he sat in the passenger saloon and used a phone to get on the internet.

The signal passed at danger was a position light signal – a PLS. And there are special instructions to the signallers at this location when a movement starting from a PLS needs to run via another PLS before reaching a platform, siding or main aspect signal. In short, the signaller must clear all the intermediate PLSs in the route before the move can take place.

When it's absolutely essential to route such a movement without all the signals being cleared (that is, allowing the driver to go only as far as one of the intermediate PLSs), the signaller must come to a clear understanding with the driver before the movement starts. The trouble, said managers at the Thames Valley Signalling Centre, is that strict compliance with this instruction is not possible at Paddington, because the station is very busy.

This instruction has since been cancelled, as it created 'SPAD trap': if the driver automatically assumed that the next PLS was 'off', they were more likely to SPAD it if it wasn't 'off'. The emphasis has moved to the driver looking out for, and obeying, the signals, which will reduce the risk of SPADs at the location.

RAIB's final document noted that the driver had woken during the night at 02:30 to eat a light meal, as part of his observance of Ramadan. He went back to bed at 03:30 and slept for a further 7 hours, before coming on duty at 13:07. He did not eat or drink anything else before the accident.

From the evidence, RAIB couldn't determine whether this interruption to his sleep, and subsequent fasting, was a factor in this incident; but they did refer to RSSB's guidance: S220 'Effects of fasting on fitness to drive'.

The press picked up on this facet, but ignored the rules issue.

Odd that.

Newsire



2 October 2011, France: Eurostar strikes boar

The 14:22 from St Pancras to Paris Gare du Nord was delayed for about an hour after striking a wild boar in the Haute Picardie area of northern France. There were no reported injuries to passengers or crew, though a temporary speed restriction was imposed as a result.



8 October 2016, US: 33 injured as commuter service strikes works train

In the evening, a Long Island Railroad service derailed near New Hyde Park station, injuring 26 passengers and seven members of staff. The incident occurred when the unit struck a works train which was fouling the line.



21 October 2016, Cameroon: Passenger train derails, killing at least 70

A passenger train derailed near Eséka, western Cameroon, killing at least 70 people and injuring more than 600. Heavy rains caused a landslide, which destroyed a road bridge between Yaoundé and Douala. As a result, the number of passengers was reportedly around 1,300 (the train's normal capacity is 600). Eight additional carriages had been added to the usual nine-car formation to accommodate them.



What are non-technical skills?



Do a search on the RSSB website or Google for 'non-technical skills' and you'll probably hit a lot of detailed academic papers. But what does it actually mean? And how might it impact the way the operational railway works?

The term 'non-technical skills', often shortened to 'NTS', covers a wide range of capabilities. This includes the capacity to reason, communicate, focus, or judge situations. We all use them every day both in and out of work. They're a combination of personal, cognitive and social skills, connecting the way you think to what you do in practice. They look at how you take in information from around you, process it, and react to it.

RSSB has identified 26 NTS which

staff working on the operational railway can use in their jobs (see page 11). These can be improved with better training and development, helping you stay aware of what is going on around you, and what might happen; to communicate with colleagues and members of the public; and to manage your workload.

NTS are tightly linked to technical skills and knowledge. For example, in train driving, you can have all the technical knowledge about the traction, route and rules – this is the 'what' you do and 'why'. NTS are the 'how' you do the tasks, including the skills and techniques you can use to do them to the best of your ability. And that's where NTS can really make a difference.

NTS have powerful potential to contribute to safety on the railway. This is being recognised by organisations in the industry, who have been developing these skills in their people over the last few years.

NTS are in no way meant to replace technical knowledge; but rather to compliment technical skills. Over the next few pages, NTS experts from across the industry tell us about how they're integrating these skills into their organisations: for example, to reduce the risk of a SPAD or an incident at the platform train interface, or reduce fatigue.

We'd love to hear your thoughts on NTS. How do you use them? Do you find them useful? Get in touch and tell us your experience by emailing righttrack@rssb.co.uk



25 October 2016, Canada: Grain train derailed, landslide the possible cause

At around 11:00 local time, a Canadian Pacific freight train derailed in Fraser Canyon, British Columbia, causing several wagons to fall into the local river. There were no reported injuries and no dangerous goods involved.



26 October 2016, US: Freight derailed in Illinois, blocks roads, knocks out power; no reported injuries

At 01:48 local time, a 125-wagon coal train derailed in Belleville, Illinois. Several level crossings (and therefore several roads) were blocked. Around 500 residents also found themselves without electricity, as the wagons brought down local power lines. There were no reported injuries.



28 October 2016, US: Freight trains collide in Pennsylvania, 2 injured

Just before 08:30 local time, two CSX freight trains collided head-on in Chester Township, Pennsylvania. One of the locomotives derailed, rupturing its fuel tank. Two of the four crew members attended hospital with minor injuries. A local politician has called for an investigation into the use of Positive Train Control, believing the system to be absent from the area concerned.

Integrating Non-Technical Skill into the railway



NTS can be a daunting subject. It's tempting to settle for what I call 'NTS-lite' and just do a standalone course which might not have a lasting effect. RSSB's guide shows that integrating NTS needn't be a painful process, and is worth the effort to reap the long-term benefits.

Andrew Taylor,

Senior Operations Training Development & Evaluation Manager, Great Western Railway.

Non-technical skills (NTS) are social, cognitive and personal skills which help us to better manage our behaviours and actions by being more aware of our task performance and possible limitations. They help people to undertake the technical tasks required in their roles effectively. Two organisations tell us what they're doing to bring NTS to the forefront of the operational railway.

Since 2012, the industry has come together to discuss the benefits of NTS. We have developed a good understanding of what they are, the value they add to safety management, and how they can be incorporated into a competence management system (CMS). RSSB and Network Rail have been leading the work to integrate NTS.

Integrating NTS is a significant, long term programme. It's not simply about including NTS in training; it needs to be integrated into all aspects of the work done by railway staff

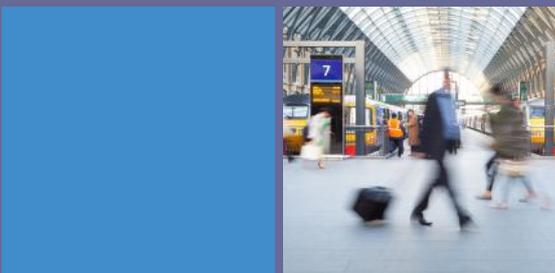
RSSB

Using input from across the industry and our own research, RSSB identified NTS relevant to working on the operational railway. These are based on the type of tasks that staff undertake, and led to the guidance 'Non-technical skills required in train driver role: Developing an integrated approach to NTS training and investment' in 2012. This gave advice on integrating NTS into the working culture.

It was useful at the time, but the industry has now moved on and needs more practical and operational guidance on NTS integration. So we've written a new NTS integration guide, which offers practical advice on how to integrate NTS at the different stages of an organisation's CMS (see diagram).

The guide comes as a good practice guide with detailed guidance, and a short summary version which is useful for starting the conversation. The guide, and the accompanying NTS tool kit, have six key areas (see diagram).

- *RSSB provides the guidance and training on NTS to organisations in the industry. These organisations then bring it into their own culture. Network Rail tells us how this is done.*



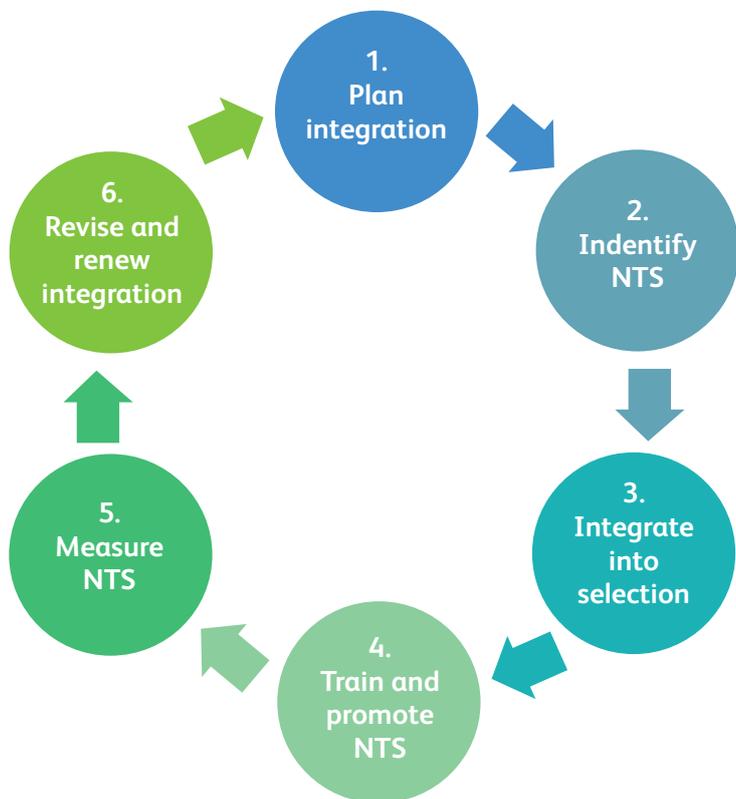
Further information

RSSB's NTS toolkit can be found on its extranet:

www.rssb.co.uk/extranet

For the guide and summary, for to

www.rssb.co.uk and search for "NTS integration"



- 1. **Planning integration:** Thinking about organisational readiness for NTS
- 2. **Identifying NTS:** Tools for identifying relevant NTS to technical tasks, and integrating NTS into competence standards
- 3. **Integration into selection:** Examples of NTS in existing selection processes that can be integrated in new selection procedures
- 4. **Training and promoting NTS:** Example, plus creating the right environment for NTS training
- 5. **Measuring NTS:** Providing feedback on NTS
- 6. **Review and renew NTS programme:** Evaluate the effectiveness of your NTS programme, providing NTS support

Network Rail

Here at Network Rail, we’ve been implementing NTS into our organisation since 2012; and we’ve experienced first-hand some of the challenges outlined in the RSSB’s Integration Guide.

At the heart of our NTS Programme is the idea that NTS should be integrated in all our people processes, to make sure that the right people, with the right aptitude, skills and knowledge, showing the right attitude, do the job safely. We look at NTS throughout our employees’ journey with us (see table).

SELECTION:
As part of the new signaller selection process (introduced in December 2012), we included a situational judgement test and NTS interview.

TRAINING:
NTS have been integrated into the 10 week initial signaller training. It includes looking at what NTS are and why they’re important; and developing those skills, particularly with practice on simulators

ASSESSMENT:
We’ve introduced an NTS assessments, and provide an Assessing NTS course for line managers. Line managers are then better able to make judgements about their staff’s NTS, and can offer them constructive feedback.

DEVELOPMENT:
Since 2013, NTS has been integrated into the regular safety briefing and development days delivered to all signallers. The NTS Self Evaluation Questionnaire helps staff identify their personal natural capabilities; and the interactive materials talk about each NTS, why it’s relevant to their job, and the practical steps that could improve it.

We’ve made a good start, but there are still challenges. Most significantly, some operational staff struggle to see NTS as a formal component of their professional competence. This was strongest at the beginning, but we are slowly starting to see changes. Stage 1 of RSSB’s new guide talks about making the importance of NTS understood to all staff, from senior managers to operational staff, line managers to trainers and briefers, so that it’s not dismissed as “irrelevant psychobabble”.

This includes making sure line managers, trainers and briefers understand the importance of NTS and have the skills to integrate them within their teams. Having a continuous development programme for NTS is also crucial, to recognise and cater for individual differences. Because we are all unique, there is no one size fits all solution to NTS development. The coaching approach provides personal feedback about strengths and weaknesses, and offers opportunities to develop NTS.

SPADtalk:

Fatigue, Health and Wellbeing



In this, the third instalment in our series on the underlying causes of SPADs (see *SPADtalk, issue 15*), we are shining the spotlight on fatigue, health and wellbeing.

In a 2015 review, factors related to fatigue, health and wellbeing were identified in 21 % of high risk railway incidents, including SPADs. This was fairly equally split between fatigue factors arising from outside work (such as noisy neighbours disturbing your sleep), fatigue created by the work itself (for example, working longer hours than industry guidelines permit) and ill-health. We also look at some incidents where fatigue played a part (see *Rock-a-by Shunter*, p. 12), and provide guidance to help you manage fatigue.

One of the difficulties in managing fatigue, perhaps more than any of the other underlying causes we're looking at in these SPADtalks, is that it requires managing both your home and working lives, and how they fit together. This is relevant to health and wellbeing issues as well as fatigue. To manage these issues effectively, we need to create working environments where fatigue or illness can be discussed,

and where staff feel supported. Creating such a working environment is a real challenge; but waiting until the last opportunity before managing health or fatigue (when you're already suffering) doesn't create the right culture.

To create an environment at work where all staff can discuss their needs, concerns and issues relies on line managers and the staff they support working effectively together. This will allow open discussions around the management of fatigue, health and wellbeing in the work context. Whilst occupational health, company health programmes, union representatives and confidential reporting systems play a role, it is normally the relationship between staff and their line managers which holds the key to effective management of fatigue, health and wellbeing.

If, for example, an employee self-reports feeling tired, how should the manager react? Are there company policies which he or she should use to inform their decisions? For the manager, there are pitfalls at each end of the spectrum. If staff feel or believe that reporting personal fatigue can lead to unfair treatment, then fatigue issues may be driven underground. This is the case however reports of fatigue are dealt with: the perception that it leads to unfair treatment in itself can lead to under-reporting. For example, a member of staff with a newborn baby at home may be worried about reporting yet another sleepless night, and so work their shift without mentioning it to his manager. This means that there is an increased risk of operational error due to fatigue; and if the role is a safety-critical one, can increase the risk of injury. On the other hand, if staff believe fatigue issues aren't questioned, there can be fears that it becomes a "skivers' charter", creating tension among colleagues. Creating the professional "middle approach" between these two extremes can be a real



challenge, but is needed if we are going to reduce the number of incidents where fatigue, health and wellbeing play a part.

At RSSB, we wanted to see how we could improve the issues around fatigue. So we asked people from a range of job roles to tell us about what needed to be changed in industry to help manage fatigue, and to promote health and wellbeing. One

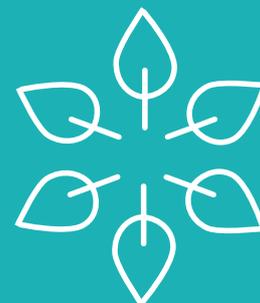
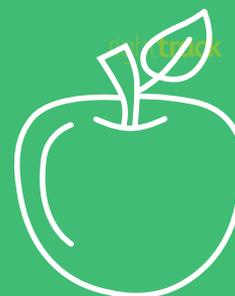
area that came up again and again was '*personalisation*'. This is the term for considering everybody as an individual, including your personal requirements for effectively managing fatigue, health and wellbeing. This includes understanding your needs and shift patterns, recognising pressures from outside work and personal differences.

The impact of fatigue and health and wellbeing issues is recognised in the forthcoming National SPAD Strategy, which will be published later this year (2017). The National SPAD Strategy recognises that this area of SPAD



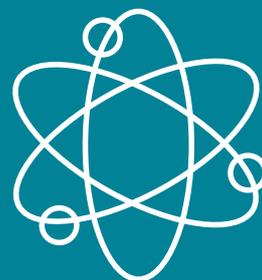
management is the joint responsibility between the driver manager and driver self-management. The Strategy will highlight existing industry good practice in this area.

In the next SPADtalk in this series, we will be looking at how process and procedure documents, including route maps and professional driving policies, contribute to reducing SPADs.



You can find further guidance on managing fatigue:

- On RSSB.co.uk. Search for "Fatigue"
- On Opsweb, in the "Non-technical skills" box under "Briefing Resources".



Using NTS at the PTI



The platform train interface (PTI) is one of the biggest areas of risk on the GB mainline railway. This is why RSSB, on behalf of industry, produced the PTI strategy in 2015; and why industry continues to follow its recommendations.

One way of doing this is to make sure the non-technical skills (NTS) of the staff who work at the PTI (for example, guards and dispatchers) are as good as they can be. Improving the use of NTS by guards and dispatchers has a number of potential benefits, including:

- Reducing dispatch errors. NTS can improve staff's ability to anticipate potential errors, so they can prevent them.
- Enhancing the ability to spot "at risk" passengers and "behaviours". NTS increase levels of awareness and risk anticipation
- Increase influence on passenger behaviour. NTS help people be clearer and more assertive in interpersonal interactions, such as communicating with passengers.

To help you, RSSB has developed learning materials for all 26 NTS (see box). These including videos, scenario cards, animations and problem solving, and have been designed to fit with existing training material. That way, they can be used by trainers as part of your team brief or safety day.

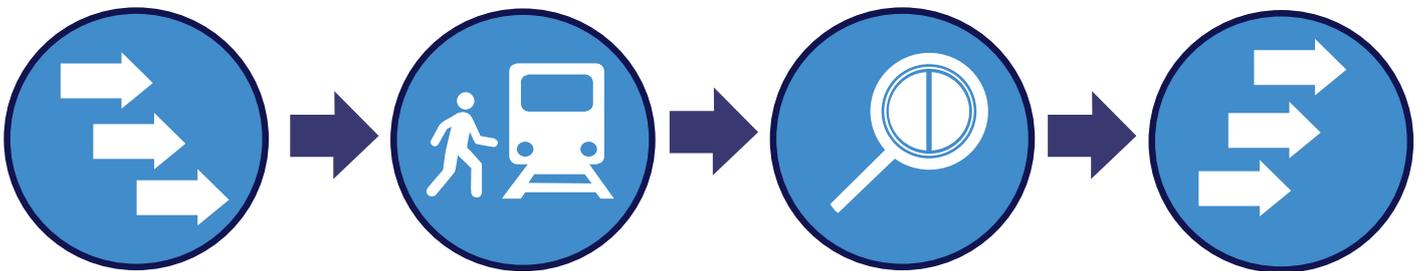
We've provided step-by-step instructions to help you use the materials. These can help you:

1. Understand how NTS can help you in your role
2. Know which NTS are relevant to your role
3. Understand how learning and using these skills can improve safety and successful task performance; and
4. Learn how to use these skills in daily tasks, for example through risk triggered commentary.

"The project has established there is a real benefit in developing the skills of all staff, involved in the movement of trains, on and off the rail network. This will help to focus our organisation on Non-technical skills (NTS) for all grades and eventually make us even more resilient to errors".

Kevin Langley,

Operations Standard Manger, DB Cargo UK



News wire



1 November 2016, US: Freight carrying dangerous goods derails in Massachusetts, no reported leaks or injuries

At 20:30 local time, a Pan Am freight carrying a potentially flammable cleaning material derailed near the intersection of Broadway, River Street and Graniteville Road in Westford, Massachusetts. There were no reported injuries.



3 November 2016, Pakistan: At least 21 killed in passenger train collision in Karachi

At 07:18 local time, the 'Zakira Express' struck the rear of the stationary 'Fareed Express' at Quaidabad station in Karachi. At least 21 people were killed and 65 were injured. It was reported that a proceed aspect had been shown to the Zakira Express in error.



12 November 2016, US: Freight derails in Kentucky, no reported injuries 70

At around 07:00 local time, 22 wagons in a 163-wagon CSX freight derailed in Hardin County, Kentucky. There were no reported injuries.

The 26 NTS are:

Situational awareness

1. Attention to detail
2. Overall awareness
3. Maintain concentration
4. Retain information
5. Anticipation of risk

Conscientiousness

6. Systematic and thorough approach
7. Checking
8. Positive attitude towards rules and procedures

Communication

9. Listening (people not stimuli)
10. Clarity
11. Assertiveness
12. Sharing information

Decision making and action

13. Effective decisions
14. Timely decisions
15. Diagnosing and solving problems

Cooperation and working with others

16. Considering others' needs
17. Supporting others
18. Treating others with respect
19. Dealing with conflict / aggressive behaviour

Workload management

20. Multi-tasking and selective attention
21. Prioritising
22. Calm under pressure

Self-management

23. Motivation
24. Confidence and initiative
25. Maintain and develop skills and knowledge
26. Prepared and organised

To find out more

- You can find more information about the PTI in the Key Risks section of Opsweb, or by searching "PTI" or "NTS" in rssb.co.uk.
- The NTS learning materials and guides on how to use them are available as part of the NTS toolkit on our extranet. RSSB members can access it by registering [rssb.co.uk/ extranet](http://rssb.co.uk/extranet)



16 November 2016, US: Freight train collision in Florida injures crew, spills diesel fuel

At 04:15 local time, two freight trains – one loaded with phosphate rock, the other carrying coal – collided in central Florida. At least 20 wagons derailed, and two crew members were injured. There were also reports that 'thousands of gallons' of diesel fuel were spilled.



20 November 2016, India: Express derailed near Kanpur, killing 150

At 03:10 local time, an express derailed near Kanpur, killing 150 people and injuring 150 more. Sources suggest a rail fracture to have been the immediate cause.



25 November 2016, Iran: Collision in Haf-Khan kills 47

A passenger train struck another that had broken down on the same line at Haf-Khan in the Seman Province. The collision killed 47 people and injured a further 103. It has been reported that the collision occurred because very low local temperatures froze a set of points, which could then not be switched to route the incoming train

Rock-a-bye Shunter*



**And Driver and Guard and Track worker and Signaller and Platform staff and COSS and MOM*

In the run-up to the US elections, Donald Trump claimed that he only gets about three or four hours' sleep a night. This revelation got mixed reviews in the media: some saw his lack of sleep as a recipe for success; others expressed concern. Many of us in the UK would have remembered Margaret Thatcher making similar claims when she was in office.

Sleep has been scorned for centuries. In the middle ages, sleep was associated with laziness. Even Shakespeare took a pop at sleep, calling it 'death's counterfeit'. In our culture, sleep has been seen as pathetic, even sinful; and these links are hard to break. How many of us have heard colleagues brag about being at work despite being sleep deprived? How many of us have done it ourselves? We now understand sleep a lot better, and we know that good sleep is necessary for our health, and for safety on our railways. Laboratory studies have shown that being awake for 17 hours can make people perform as badly as being over the drink-driving limit for driving on the road. On the railway, we don't tolerate any alcohol - so why do we think it's ok for people to work when they're tired?

What's the impact on the operational railway?

Lack of sleep has been linked to incidents on the railway, such as the Clapham Junction incident, one of the UK's worst train crashes in the last 50 years. The signalling technician involved in the incident had been working lots of overtime and was suffering from fatigue. Although lessons were learned, fatigue still leads to incidents. Recent work by RSSB showed that in 2011 and 2012 fatigue was a factor in over 20% of potentially high risk incidents. RAIB has investigated 14 incidents involving fatigue, including the freight train rollback at Shap (2010), the near miss at Llandovery level crossing (2013)

and SPADs at Reading Westbury Line and Ruscombe Junction (2015).

It's not just about safety, though.

Lack of sleep is also bad for your health. Research has found that that people who get enough sleep are more likely to live longer, and less likely to develop health problems such as diabetes and heart disease. According to researchers, poor sleep could be costing the UK economy £40 billion each year, as it reduces worker productivity (you're more likely to be sick, and less likely to be able to focus on your job) and increases mortality. Over the last few years, the benefits of good sleep have made the news. A quick search on the BBC website reveals headlines like "Is getting more sleep better for your career?" and "UK adults not getting enough sleep". We're beginning to understand that sleep is a basic need, not a luxury. But there is a difference between understanding something, and doing something about it. In our industry, we've learned from the incidents we've had. But perhaps if we still think it's normal to be fighting sleep while at work, the lessons haven't been learned deeply enough.

So what can we do?

reventing and managing fatigue isn't just about what you need to do, and it isn't just about what your company needs to do. It's about everyone doing their bit, keeping each other informed, and treating each other fairly. There is guidance for staff on how to manage their own fatigue, and guidance for companies on how to manage fatigue in their workforce. To reduce fatigue across the operational railway, and therefore reduce the risks associated with it, everyone needs to do their part.

- **Help your body adjust to your shift pattern:** adjusting when you eat, sleep, nap and see daylight or bright light can help your body clock adapt to your work pattern.
- **Create a good sleep environment:** quiet, dark (even in daytime), well ventilated room at the right temperature for you, on a comfortable bed. Prevent interruptions, e.g. switch off your phone.
- Create a relaxing 'going to bed' routine which will signal to your brain that it is time to sleep.
- Learn how to nap to top up your sleep when possible.
- Learn about how lifestyle can affect your sleep, including the effects of caffeine, alcohol, exercise and food choices, and if necessary, consider changing your habits.
- If you feel tired at work, tell your manager or your union safety rep.
You can get more information on Opsweb in the Fatigue section: click on "Briefing resources" and then "non-technical skills".
Fatigue and its effects have been dramatized in RED 35 and RED 46. These are also on Opsweb.

Suicide - Reducing the risk on the railway

“Reducing the number of suicides on the railway cannot be addressed by any one of the industry’s companies alone. It is essential that they all work together to achieve this aim and ultimately dispel the myth that suicides are inevitable on the network.”

Until now, companies have not had a clear list of measures to put in place, either individually or collectively, to really make that happen. The publication of the 9 Point Plan changes all that by identifying nine areas each stakeholder should address to prevent suicides on our railway.”

Seamus Scallan

Safety Director – Rail, First Group, and chair of SPDHG

The nine points

The nine points in the guidance focus on:

1. Leadership and resources
2. Identifying locations prone to high risk of suicide
3. Deploying suicide prevention measures
4. Promoting life-saving interventions
5. Training staff to intervene in suicide attempts
6. Promoting help-seeking behaviour in those at risk of suicide
7. Trauma management for industry colleagues involved in suicide events
8. Trauma support training
9. Providing emotional support as appropriate to staff and customers who may have witnessed a suicide

A suicide on the railway is an emotionally difficult chapter in the lives of all those unfortunate enough to be involved. Our rail colleagues, the individual involved and their family and friends are uppermost in our minds following each event. Yet they are far too frequent: last year there were 253 suicides on our railway, equivalent to almost five a week.

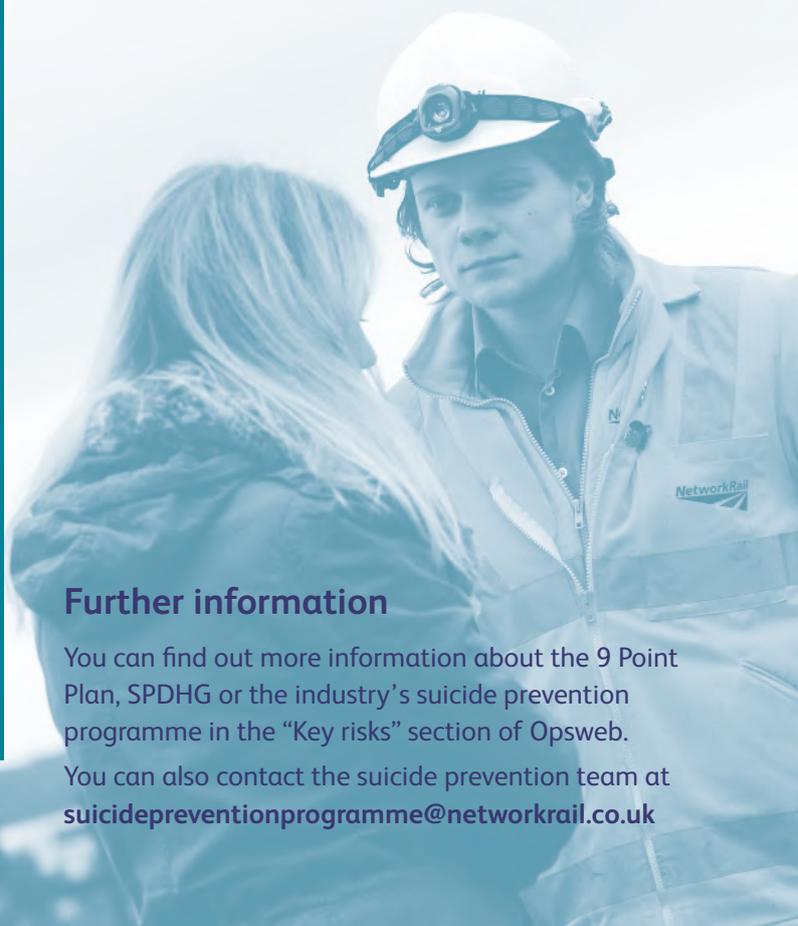
To reduce the risk of suicide incidents on the railway, the industry has formed a Suicide Prevention Duty Holders Group (SPDHG), which is responsible for developing a suicide prevention strategy. They have published the Guidance for creating a Suicide Prevention Plan, although it is quickly becoming known as the 9 Point Plan.

Organisations across the railway need to adopt the nine points (see box), and create a suicide prevention plan around them. They can then deliver and monitor progress against their own plan; whilst Network Rail will create plans at route level. These plans will capture the actions that must be done in line with the guidance, and combine the outputs of all duty holders that operate across that route. This way, we will have a coherent plan for the route as a whole, that everyone can sign up to. Progress can be monitored at route level by Network Rail on behalf of industry.

Further information

You can find out more information about the 9 Point Plan, SPDHG or the industry’s suicide prevention programme in the “Key risks” section of Opsweb.

You can also contact the suicide prevention team at suicidepreventionprogramme@networkrail.co.uk





The Lowdown:

Andy Sanders, multi-purpose vehicle driver

In autumn and winter, the seasonal weather can work against the railway. Luckily, there's a secret army of de-leafers, sanders, anti-icers and de-icers. RSSB's Martha Parkhurst goes to meet anti-icer driver Andy Sanders of Balfour Beatty.

I'm here again, at Tonbridge depot. But this time, I'm freezing. Last time, Danny Buss and his engineers showed me how the machines were looked after in the summer months, when they're not so much in use (see Right Track issue 16). This time, I get to see these magnificent beasts in action.

Danny welcomes me at the gate again, and I'm glad of the offer of a cup of tea to thaw the icicles

that have formed on my fingers. It is one of the coldest days of the year so far, with frozen dew on the cobwebs, and the fog is so dense you can't see more than a few metres ahead. And yet, the railway is running as normal.

I'm introduced to Andy, who will be taking me in his cab. He and Jason, who will drive a different circuit that day, have already checked their machines are in good working order, and are having a final cup of tea in front of the weather – which does not promise to get better any time soon.

Andy's been in the railway for 30 years or so. He started off as a freight guard under British Rail,

before joining the driving ranks. He began driving passenger trains at Orpington, until the Tonbridge depot opened in 2007. He's now been driving MPVs for 10 years, which he prefers to passenger trains. I ask Andy what changes he's seen over that time, and he says the biggest difference is in the safety consciousness of the industry. It now takes much longer to do some tasks, as there are safety hoops to jump through. "But it's worth it, as the railway is now so much safer."

Their job is to keep the railway running, whatever the weather. Passengers and freight still have places to be, and it's our industry's business to get them there. Andy

Newsire

 29 November 2016, Romania: Fatal collision in Gorj County

A collision in Gorj County killed one train driver and injured another. Initial reports suggest that the two locomotives were to be coupled, but that one came in too fast. An investigation has been launched.

 2 December 2016, Canada: Freight train derails near Craven, no reported injuries

20 wagons in a Canadian Pacific freight derailed north of Regina, near Craven. Several of the vehicles were carrying potash, much of which was spilled on or about the track.

 7 December 2016, Australia: Freight derails near Julia Creek, no reported injuries

In the morning, two wagons within a freight carrying zinc concentrate derailed five miles east of Julia Creek. There were no reported injuries and no spillages. An investigation has been launched.



shows me round his train. I am relieved to see that there are heaters in the cab. A last check of the brakes, Rob the operator turns on the anti-icer, and off we go!

The anti-icer is applied to the third rail. If that freezes up, any electric trains that rely on it will lose power, and be stuck. And that's the best possible outcome. At worst, it can lead to electric arcing and sparking, a scenario which could have devastating effects on anyone caught in it. To make sure that doesn't happen to the MPVs, they run on diesel; and can operate in up to ½ metre of snow.

To make sure the anti-icer is applied evenly and thickly enough throughout the route, Andy needs to drive steady at 40mph. Any faster, and the green light on Rob's dashboard goes off. It can last up to 300 shoe gear passes – but, with longer trains having ever more shoes, the anti-icer needs will need to be applied more and more frequently.

This is the task for this time of year. Last autumn, he and Rob were clearing leaves off the track – a far more demanding job, particularly for Rob. Their summer months are spent apart. As well as taking all the holiday he can't take in autumn and winter, Andy does a few rounds for weed killing. But predominantly it's all about refreshing route knowledge. And boy does that come in handy!

Andy announces "there's a red signal about 200 metres ahead". The freezing fog looks like grey soup, you can't see 20m ahead, let alone 200m! Rob and I look at each other. I want to question Andy's judgement, but I'm aware I can't distract him. But there's no need to question – 200m pass and, lo and behold, a red signal! I ask Andy what the worst driving conditions are. "Fog, and heavy snow. In heavy snow, the top headlight reflects on the snowflakes, so you really can't see anything."

In any one day, Andy and Rob will travel 200-250 miles around Kent. Today we're doing the route Andy was planned to do, but if Network Rail has a particular problem on any part of the line, they can call in on Andy or any of his colleagues to change their shift. This is known as "WAR" – Work as Required. And Andy and his colleagues have the route knowledge to do that, anywhere in Kent.

Andy and Rob take me up to Redhill before depositing me at Tonbridge station. A quick wave, and Andy and his MPV go on with the rest of their shift, allowing trains to run on even more of the network.



10 December 2016, Bulgaria: Freight carrying dangerous goods derailed and explodes, killing 7

At 05:37 local time, a freight derailed in Hitрино. Two of the wagons – carrying propane-butane and propylene – struck an electricity pylon. The resulting explosion and fire engulfed some 50 buildings, trapping several people (including many children). Seven people were killed and 29 were injured.



10 December 2016, China: Freight train strikes track workers, killing 6

Six track workers were struck and killed by an express freight on the line between Beijing and Guangzhou. Forward-facing CCTV footage shows that smog had reduced visibility. An investigation has been launched as to why the team were working on an open line. Internet reports suggest there was a communication breakdown, whereby a warning sent to the team went unacknowledged.



31 December 2016, Egypt: Level crossing collision kills 2 near Giza

A passenger train struck a bus at a level crossing in al-Atf, Giza. Two people, including the bus driver, were killed. An investigation has been launched.



Grayrigg: 10 years on

Just before 20:15 on 23 February 2007, a 'Pendolino' carrying 109 passengers and crew derailed at 95 mph near Grayrigg in Cumbria. All nine vehicles left the line, eight of them jack-knifing down an embankment. The first ambulance and fire crews arrived just after 20:45, and were soon joined by many other rescuers. Eventually, there'd be almost 500 staff on site.

Though hindered by rain, darkness, and access problems, by 22:47 evacuations had been completed; emergency crews scanned the train with thermal imagers to make sure no one was left inside.

Twenty-eight people suffered serious injuries. Most were soon discharged from hospital. Not so 84-year-old Margaret Masson from Glasgow, who sadly succumbed to her injuries whilst being airlifted to safety.

RAIB's investigation confirmed that the train derailed on a crossover, shining a spotlight on the condition of the points. The immediate cause was the condition of the stretcher bar arrangement, which holds the point's moving blades the correct distance apart. The three bars were either disconnected or missing: between them, one wasn't in position, another had nuts and bolts missing, and two were fractured.

Part of the problem had been about inspections: the weekly one scheduled for 18 February, just five days before the accident, had not occurred. The supervisor on the ground had agreed to make a change to his inspection plan, and then forgot he'd done so. But it wasn't just down to him: Network Rail didn't understand that points like these, with non-adjustable stretcher bars, behave differently from other designs. This 'resulted in an absence of clear and properly briefed standards' for setting up and adjusting such points, according to RAIB.

The train came out of this report much better than the points: its crashworthiness allowed it to avoid various hazards 'almost completely'. The robust couplers

generally held the carriages together, the anti-roll bar links ensured that most of the bogies remained attached, and the bodyshell resisted penetration. Most of the passengers were contained in the train by its laminated windows, although two were injured after they'd been ejected through breakable emergency exit panes (the standard at the time permitted one non-laminated window per carriage for egress). And some passengers in the leading vehicle were struck by reading light panels that had become detached.

The report included 29 recommendations, and Network Rail amended its instructions, management and checks on basic visual inspections, and started to analyse the loads and forces in its non-adjustable stretcher bar assemblies.

Major train accidents are part of how our industry learns, starting with the death of William Huskisson MP at the opening of the Liverpool & Manchester Railway in 1830. That led to the first Railway Regulation Act (1840). Over the next 50 years, block signalling, interlocking and continuous braking on passenger trains became mandatory. The 20th century saw further advances, from continuous welded rails and multi-aspect signalling to the AWS and TPWS and improvements in crashworthiness.

Every year, RSSB produces a safety performance report, bringing together data on derailments, collisions, fires, fatalities and injuries to passengers, staff and members of the public. Every year for the last 10 years – every year since Grayrigg – we've recorded zero passenger and workforce fatalities in train accidents.

But we live in an uncertain world: as safety expert James Reason wrote in 1997, the 'large random component in accident causation means that 'safe' organisations can still have bad accidents, and 'unsafe' organisations can escape them for long periods. Bad luck can bring down the deserving, while good luck can protect the unworthy.'